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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/081,369	02/22/2002	Barrett E. Cole	H0002243	2959

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EXAMINER

WILLE, DOUGLAS A

ART UNIT	PAPER NUMBER
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2814

DATE MAILED: 01/30/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/081,369

Applicant(s)

COLE ET AL.

Examiner

Douglas A Wille

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 13 August 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-41 is/are pending in the application.
- 4a) Of the above claim(s) 25-41 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17 and 19-24 is/are rejected.
- 7) ☒ Claim(s) 18 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s) -

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3. 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  - I. Claims 1 - 24, drawn to a device, classified in class 250, subclass 338.1.
  - II. Claims 25 - 27, drawn to a device, classified in class 356, subclass 318.
  - III. Claims 28 - 31, drawn to a method, classified in class 438, subclass 65.
  - IV. Claims 32 - 41, drawn to a device, classified in class 257, subclass 443.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the subcombination could be formed with a substrate having and opaque coating on the glass. The subcombination has separate utility such as a detector.
3. Inventions II and III are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the detector could be a prism spectrometer.
4. Inventions I and IV are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require

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the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the subcombination could be formed with side-by-side detectors. The subcombination has separate utility such as a detector with stacked units.

5. Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Groups II, III and IV, restriction for examination purposes as indicated is proper.

6. During a telephone conversation with Brad Forrest on 8 August 2002 a provisional election was made without traverse to prosecute the invention of I, claims 1 - 24. Affirmation of this election must be made by applicant in replying to this Office action. Claims 25 - 41 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

7. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

***Claim Rejections - 35 USC § 112***

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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9. Claim 17 recites the limitation "biosample" in line 2. There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 1 – 4 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cole et al. in view of Tokuda et al.
12. With respect to claim 1, Cole et al. show (see cover Figure and column 2, line 9 et seq.) a detector for spectroscopic detection (see abstract) with detectors 14 and tunable Fabry-Perot filter 22, 20. Tokuda et al. show a detector (see Figure 12 and column 3, line 15) with stacked detectors with different wavelength sensitivity (see Figure 11) which has enhanced wavelength selectivity (column 2, line 10). It would have been obvious to use the Tokuda et al. detector in the Cole et al. device to improve the wavelength sensitivity.
13. With respect to claim 2, the detectors are stacked.
14. With respect to claim 3, the Cole et al. Fabry-Perot is tunable.
15. With respect to claim 4, the filter is a Fabry-Perot.
16. With respect to claim 9, Cole et al. shows the substrate could be sapphire or glass (column 2, line 24).
17. Claims 5 - 8 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cole et al. in view of Tokuda et al. and further in view of Hier et al. and Koslowski et al.

18. With respect to claims 5 and 6 Cole et al. shows that the device could operate in the visible region (column 2, line 38) Hier et al. show that a programmable multiwavelength detector array operating in the visible and UV (see Figures 2 and 4 and column 2, line 60) could be GaN/AlGaIn and could be stacked vertically (column 3, line 67). It would have been obvious to include the materials shown by Hier et al. in the Cole et al. device to provide the visible wavelength and to extend the operating region to shorter wavelengths. Koslowski et al. show that UV imagers could be formed with AlGaIn, GaN and InGaIn (table 1, column 5). It would have been obvious to include all the materials shown by Koslowski et al. to provide the widest possible wavelength range to increase the utility of the device.

19. With respect to claims 7 and 8, Koslowski et al. show that the claimed wavelengths can be reached with the materials shown.

20. With respect to claim 12, Hier et al. show (Figure 2 and column 2, line 61) a stacked detector where light enters through the substrate. It would have been obvious to modify the basic device to include light entering through the substrate since all contacts and contact wires will be directed away from the detectors and will not obscure them.

21. Claims 10, 11, 13 – 17, 19, 23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cole et al. in view of Tokuda et al. and Yokoi.

22. With respect to claims 10, 11, 17 and 23, Cole et al. shows the device can be used to evaluate external sources (see Figure 18 and column 7, line 55). Yokoi shows (see column 1, line 10) that living tissues and cells can be evaluated by using fluorescence spectroscopy using a laser. It would have been obvious to use the Cole et al. device for the application shown by Yokoi to expand its capabilities.

23. With respect to claim 13, as noted by Applicant, charge detectors are standard devices and their use would be obvious.

24. With respect to claims 14 and 15, Cole shows a Fabry-Perot substrate, and a detector substrate. It would be obvious to include the charge detector on another substrate since it is an electronic device and not an optical device and the use of circuitry to operate the device would also be obvious.

25. With respect to claim 16, Cole et al. show two substrates and the detector of Tokuda et al. would be on the second substrate.

26. With respect to claim 19, the Cole et al. filter is a Fabry-Perot.

27. With respect to claim 24, Cole et al. show that both glass and sapphire substrates can be used with the sapphire being appropriate for the growth of GaN compounds and the use of glass for the filter is a function of the desired transmission and the cost of the substrate and the choice is a design alternative.

28. Claims 20- 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cole et al. in view of Tokuda et al. and Yokoi and further in view of Hier et al. and Koslowski et al.

29. With respect to claims 20 and 21, Cole et al. shows that the device could operate in the visible region (column 2, line 38) Hier et al. shows that a programmable multiwavelength detector array operating in the visible and UV (see Figures 2 and 4 and column 2, line 60) could be GaN/AlGa<sub>N</sub> and could be stacked vertically (column 3, line 67). It would have been obvious to include the materials shown by Hier et al. in the Cole et al. device to provide the visible wavelength and to extend the operating region to shorter wavelengths. Koslowski. et al. show that UV imagers could be formed with AlGa<sub>N</sub>, GaN and InGa<sub>N</sub> (table 1, column 5). It would

have been obvious to include all the materials shown by Koslowski et al. to provide the widest possible wavelength range to increase the utility of the device.

30. With respect to claim 22, Koslowski et al. show that the claimed wavelengths can be reached with the materials shown.

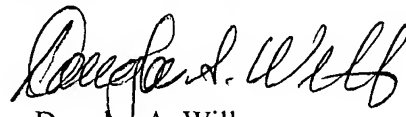
*Allowable Subject Matter*

31. Claim 18 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims. Cole et al. show a sealing support 30 and Kozlowski et al. show a bump bond but it would not be obvious to use the bump bond in place of the Cole et al. support since it does not provide a complete seal.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Douglas A Wille whose telephone number is (703) 308-4949. The examiner can normally be reached on M-F (6:15-3:45).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy can be reached on (703) 308-4918. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

  
Douglas A. Wille  
Patent Examiner

January 27, 2003